<u>Restatement to the Claims:</u>

     This is listing of claims as currently pending.

1. (Currently Amended) A system for channelizing an IF wideband input signal into separated channelized digital output signals, the system comprising,

     a complex mixer for quadrature demodulation of the IF wideband input signal into a complex signal,

     a polyphase clock generator for generating polyphase clock signals each having the same clocking signal that is staggered in phase over a clock cycle,

     a parallel converter comprising a bank of samplers for respective sampling the complex signal into staggered sampled complex signals and comprising a bank of converters for converting the staggered sampled complex signals into respective sampled digital complex signals, each of the samplers of the bank of sampler sampling the complex signals at a rate of the clock cycle at a respective staggered phase, and

     a parallel filter bank comprising a polyphase filter bank of filters for respective filtering the sampled digital complex signals into respective filtered complex signals and comprising a processor for transforming the filtered complex signals into the channelized digital output signals, <u>the channelized digital output signals being separated from each other and corresponding to a respective plurality of frequency band signals of the IF wideband signal.</u>

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1   2. (Previously Presented) A system for channelizing an IF wideband

2   input signal into separated channelized digital output signals, the

3   system comprising,

4   a complex mixer for quadrature demodulation of the IF wideband

5   input signal into a complex signal,

6   a polyphase clock generator for generating polyphase clock

7   signals each having the same clocking signal that is staggered in

8   phase over a clock cycle,

9   a parallel converter comprising a bank of samplers for

10   respective sampling the complex signal into staggered sampled

11   complex signals and comprising a bank of converters for converting

12   the staggered sampled complex signals into respective sampled

13   digital complex signals, each of the samplers of the bank of

14   sampler sampling the complex signals at a rate of the clock cycle

15   at a respective staggered phase, and

16   a parallel filter bank comprising a polyphase filter bank of

17   filters for respective filtering the sampled digital complex

18   signals into respective filtered complex signals and comprising a

19   processor for transforming the filtered complex signals into the

20   channelized digital output signals, wherein,

21   the processor is a Fast Fourier Transform processor for computing

22   N point Fast Fourier transforms of the N filter complex signals

23   once every clock cycle of $(f_s/N)^{-1}$ seconds.

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3. (Previously Presented) The system of claim 2 wherein,

the polyphase filter bank comprises a plurality of digital filters each of which is a finite impulse response filter.

4. (Previously Presented) The system of claim 2 wherein,

the polyphase filter bank comprises a plurality of digital filters each of which is an infinite impulse response filter.

5. (Previously Presented) The system of claim 2 wherein,

the input signal comprises a plurality of channel signals that are frequency division multiple access signals having a channel bandwidth, and

the polyphase filter bank comprises a plurality of digital filters each of which having a bandwidth equal to 1/2 of a bandwidth of a respective channel signal in the input signal.

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6. (Previously Presented) The system of claim 2 wherein,

the input signal is an IF wideband signal communicating channel signals communicated within a channel bandwidth,

the complex signal comprises I and Q quadrature baseband signals,

the staggered sampled complex signals are staggered sampled I and Q quadrature baseband signals,

the sampled digital complex signals are digitized staggered sampled I and Q quadrature baseband signals,

the filtered complex signals are baseband channel signals within 1/2 of the channel bandwidth, and

the channelized digital output signals are separated baseband channel signals.

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7. (Original) A system for channelizing an IF wideband signal into channelized digital output signals, the system comprising,

a complex mixer for quadrature demodulation of the IF wideband signal into a complex signal communicating channel signals communicated within a channel bandwidth, the complex signal comprises I and Q quadrature baseband signals,

a polyphase clock generator for generating polyphase clock signals each of which having the same clocking signal that is staggered in phase over a clock cycle,

a bank of samplers for respective sampling the I and Q baseband quadrature signals into staggered sampled I and Q quadrature signals, each of the samplers of the bank of sampler sampling the I and Q quadrature signals at a rate of the clock cycle at a respective staggered phase,

a bank of converters for converting the staggered sampled I and Q quadrature signals into respective sampled digital I and Q quadrature signals,

a polyphase filter bank of filters for respective filtering the sampled digital I and Q quadrature signals into respective filtered I and Q quadrature signals, and

a processor for transforming the filtered I and Q quadrature signals into the channelized digital output signals, the channelized digital output signals being separated from each other and corresponding to a respective plurality of frequency band signals of the IF wideband signal.

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1   8. (Original) The system of claim 7 wherein,

2   the processor is a Fast Fourier Transform processor for

3 computing N point Fast Fourier transforms of the N filter complex

4 signals once every clock cycle of $(f_s/N)^{-1}$ seconds, and

5   the polyphase filter bank comprises a plurality of digital

6 filters each of which is a finite impulse response filter.

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8 9. (Original) The system of claim 7 wherein,

9   the IF wideband signal comprises a plurality of channel

10 signals that are in frequency division multiple access signals

11 having a channel bandwidth, and

12   the polyphase filter bank comprises a plurality of digital

13 filters each of which having a bandwidth equal to 1/2 of a

14 bandwidth of a respective channel signal in the input signal.

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